

SEQUENCE LISTING



<110> HILL, RONALD JOHNSTON
HANNAN, GARRY NOEL

<120> NOVEL GENETIC SEQUENCES ENCODING STEROID AND JUVENILE HORMONE
RECEPTOR POLYPEPTIDES AND INSECTICIDAL MODALITIES THEREFOR II

<130> 53-99sequence listing

<140> US 09/346470

<141> 1999-07-01

<150> PCT/AU/00033

<151> 1999-01-15

<150> AU PP1536

<151> 1998-01-15

<160> 20

<170> PatentIn Ver. 2.0

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<211> 2274

<212> DNA

<213> Lucilia cuprina

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<221> CDS

<222> (1)..(2271)

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Met Leu Glu Glu Ser Ser Ser Glu Val Thr Ser Ser Ser Asn Gly Leu	
20 25 30	
gtc ttg tca tcg gat ata aat atg tca cct tcc tcg ttg gat tca ccc	144
Val Leu Ser Ser Asp Ile Asn Met Ser Pro Ser Ser Leu Asp Ser Pro	
35 40 45	
gtt tat ggc gat cag gaa atg tgg ctg tgt aac gat tca gct tca tat	192
Val Tyr Gly Asp Gln Glu Met Trp Leu Cys Asn Asp Ser Ala Ser Tyr	
50 55 60	
aat aac agt cat cag cat agt gtt ata act tcg ctg cag ggc tgc acc	240
Asn Asn Ser His Gln His Ser Val Ile Thr Ser Leu Gln Gly Cys Thr	
65 70 75 80	
tca tca ttg ccg gcc caa aca acc att ata cct ctg tca gct tta ccc	288
Ser Ser Leu Pro Ala Gln Thr Thr Ile Ile Pro Leu Ser Ala Leu Pro	
85 90 95	
aat tcc aat aat gcc tcc ctg aat aat caa aat caa aat tat caa aat	336
Asn Ser Asn Asn Ala Ser Leu Asn Asn Gln Asn Gln Asn Tyr Gln Asn	
100 105 110	
ggc aat tcc atg aat aca aat tta tcg gtt aac aca aat aac agt gtt	384
Gly Asn Ser Met Asn Thr Asn Leu Ser Val Asn Thr Asn Asn Ser Val	
115 120 125	

gga gga ggt gga ggt ggt ggt ggt gta ccc ggt atg act tca ctc aat	432
Gly Gly Gly Gly Gly Gly Gly Gly Val Pro Gly Met Thr Ser Leu Asn	
130 135 140	
ggt ctg ggt ggt ggt ggt ggc agt caa gtg aat aat cac aat cac agc	480
Gly Leu Gly Gly Gly Gly Gly Gly Ser Gln Val Asn Asn His Asn His Ser	
145 150 155 160	
cac aat cat tta cac cac aac agc aac agt aat cac agt aat agc agt	528
His Asn His Leu His His Asn Ser Asn Ser Asn His Ser Asn Ser Ser	
165 170 175	
tcc cac cac aca aat ggc cac atg ggt att ggc ggc ggt ggt ggt ggc	576
Ser His His Thr Asn Gly His Met Gly Ile Gly Gly Gly Gly Gly Gly	
180 185 190	
tta tcg gtc aat att aat ggt ccc aat atc gtt agc aat gcc caa cag	624
Leu Ser Val Asn Ile Asn Gly Pro Asn Ile Val Ser Asn Ala Gln Gln	
195 200 205	
tta aac tcg tta cag gcc tca caa aat ggc caa gtt att cat gcc aat	672
Leu Asn Ser Leu Gln Ala Ser Gln Asn Gly Gln Val Ile His Ala Asn	
210 215 220	
att ggc att cac agt atc atc agt aat gga tta aat cat cat cac cat	720
Ile Gly Ile His Ser Ile Ile Ser Asn Gly Leu Asn His His His His	
225 230 235 240	

cat cat atg aat aac agt agt atg atg cat cat aca ccc aga tct gaa	768
His His Met Asn Asn Ser Ser Met Met His His Thr Pro Arg Ser Glu	
245 250 255	
tca gct aat tcc ata tca tca ggt cgt gat gat ctt tca ccc tcg agc	816
Ser Ala Asn Ser Ile Ser Ser Gly Arg Asp Asp Leu Ser Pro Ser Ser	
260 265 270	
agt ctt aat ggc ttc tca aca agc gat gct agt gat gtt aag aaa atc	864
Ser Leu Asn Gly Phe Ser Thr Ser Asp Ala Ser Asp Val Lys Lys Ile	
275 280 285	
aaa aaa ggt cct gcg ccc cgt tta caa gag gaa ctg tgt ctg gtg tgt	912
Lys Lys Gly Pro Ala Pro Arg Leu Gln Glu Glu Leu Cys Leu Val Cys	
290 295 300	
ggg gat cgg gcg tcc ggt tat cat tat aac gca ctc acc tgt gaa ggc	960
Gly Asp Arg Ala Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys Glu Gly	
305 310 315 320	
tgt aag ggg ttc ttt cga cgg agt gtt acc aaa aat gcg gtg tat tgt	1008
Cys Lys Gly Phe Phe Arg Arg Ser Val Thr Lys Asn Ala Val Tyr Cys	
325 330 335	
tgt aaa ttt ggt cat gcc tgc gaa atg gac atg tat atg cga cgt aaa	1056
Cys Lys Phe Gly His Ala Cys Glu Met Asp Met Tyr Met Arg Arg Lys	
340 345 350	

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Cys Gln Glu Cys Arg Leu Lys Lys Cys Leu Ala Val Gly Met Arg Pro	
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gaa tgt gtg gtg ccc gaa aac cag tgt gca atg aaa cga cgc gaa aag	1152
Glu Cys Val Val Pro Glu Asn Gln Cys Ala Met Lys Arg Arg Glu Lys	
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aaa gca caa aaa gag aag gat aaa ata cag acc agt gtg tgt gca acg	1200
Lys Ala Gln Lys Glu Lys Asp Lys Ile Gln Thr Ser Val Cys Ala Thr	
385	390
395	400
gaa att aaa aag gaa ata ctc gat tta atg aca tgt gaa ccg cca tca	1248
Glu Ile Lys Lys Glu Ile Leu Asp Leu Met Thr Cys Glu Pro Pro Ser	
405	410
415	
cat cca acg tgt ccg ctg tta cct gaa gac att ttg gct aaa tgt caa	1296
His Pro Thr Cys Pro Leu Leu Pro Glu Asp Ile Leu Ala Lys Cys Gln	
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430	
gct cgt aat ata cct cct tta tcg tac aat caa ttg gca gtt ata tat	1344
Ala Arg Asn Ile Pro Pro Leu Ser Tyr Asn Gln Leu Ala Val Ile Tyr	
435	440
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aaa tta ata tgg tat caa gat ggc tac gaa cag cca tcc gag gaa gat	1392
Lys Leu Ile Trp Tyr Gln Asp Gly Tyr Glu Gln Pro Ser Glu Glu Asp	
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ctc aaa cgt ata atg agt tca ccc gat gaa aat gaa agt caa cac gat	1440
Leu Lys Arg Ile Met Ser Ser Pro Asp Glu Asn Glu Ser Gln His Asp	
465 470 475 480	
gca tca ttt cgt cat ata aca gaa atc act ata cta aca gta caa tta	1488
Ala Ser Phe Arg His Ile Thr Glu Ile Thr Ile Leu Thr Val Gln Leu	
485 490 495	
att gtg gaa ttt gcc aag ggt ttg cca gcg ttt acc aaa ata cca caa	1536
Ile Val Glu Phe Ala Lys Gly Leu Pro Ala Phe Thr Lys Ile Pro Gln	
500 505 510	
gag gat caa ata aca cta tta aag gcc tgc tca tca gaa gtt atg atg	1584
Glu Asp Gln Ile Thr Leu Leu Lys Ala Cys Ser Ser Glu Val Met Met	
515 520 525	
ttg cga atg gca cga cgt tac gat cac aat tca gat tcg ata ttc ttt	1632
Leu Arg Met Ala Arg Arg Tyr Asp His Asn Ser Asp Ser Ile Phe Phe	
530 535 540	
cc aat aat cga tcg tat acg cgt gac tct tat aaa atg gct ggc atg	1680
Ala Asn Asn Arg Ser Tyr Thr Arg Asp Ser Tyr Lys Met Ala Gly Met	
545 550 555 560	
gct gat aat att gag gat ctg ctg cat ttc tgt cga caa atg tac tcg	1728
Ala Asp Asn Ile Glu Asp Leu Leu His Phe Cys Arg Gln Met Tyr Ser	
565 570 575	

atg aaa gtg gac aat gtc gaa tat gct cta ctc act gcc att gtg atc	1776
Met Lys Val Asp Asn Val Glu Tyr Ala Leu Leu Thr Ala Ile Val Ile	
580	585
590	
ttt tcc gat cgg ccg ggt ctc gaa gaa gcc gaa cta gtc gaa gcg ata	1824
Phe Ser Asp Arg Pro Gly Leu Glu Glu Ala Glu Leu Val Glu Ala Ile	
595	600
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caa agt tac tac atc gat aca ctc cgc att tac ata ctt aat cgc cat	1872
Gln Ser Tyr Tyr Ile Asp Thr Leu Arg Ile Tyr Ile Leu Asn Arg His	
610	615
620	
tgc ggc gat ccc atg agt ctc gta ttc ttt gcc aag ctt ctg tca att	1920
Cys Gly Asp Pro Met Ser Leu Val Phe Phe Ala Lys Leu Leu Ser Ile	
625	630
635	640
cta acc gaa ctg cgt acg ttg ggc aat caa aat gcc gaa atg tgt ttc	1968
Leu Thr Glu Leu Arg Thr Leu Gly Asn Gln Asn Ala Glu Met Cys Phe	
645	650
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tcg ttg aaa ttg aaa aat cgc aaa ctg cca aaa ttc ctc gaa gag atc	2016
Ser Leu Lys Leu Lys Asn Arg Lys Leu Pro Lys Phe Leu Glu Glu Ile	
660	665
670	
tgg gat gta cat gcc att cca ccc tca gtg cag tca cac ata cag gct	2064
Trp Asp Val His Ala Ile Pro Pro Ser Val Gln Ser His Ile Gln Ala	
675	680
685	

acc cag gcg gaa aag gcc gcc cag gaa gct cag gca aca aca tcg gcc 2112
 Thr Gln Ala Glu Lys Ala Ala Gln Glu Ala Gln Ala Thr Thr Ser Ala
 690 695 700

att tca gca gcc gcc acc tca tct tcc tcc ata aat acc tcg atg gca 2160
 Ile Ser Ala Ala Ala Thr Ser Ser Ser Ser Ile Asn Thr Ser Met Ala
 705 710 715 720

aca tca tcc tca tca tcg tta tcg cca tcg gcg gcc tca aca ccc aat 2208
 Thr Ser Ser Ser Ser Ser Leu Ser Pro Ser Ala Ala Ser Thr Pro Asn
 725 730 735

ggc ggt gcc gtc gat tat gtt ggc acc gat atg agt atg agt tta gta 2256
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<210> 2

<211> 757

<212> PRT

<213> Lucilia cuprina

<400> 2

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Leu Ser Val Asn Ile Asn Gly Pro Asn Ile Val Ser Asn Ala Gln Gln			
195	200	205	
Leu Asn Ser Leu Gln Ala Ser Gln Asn Gly Gln Val Ile His Ala Asn			
210	215	220	
Ile Gly Ile His Ser Ile Ile Ser Asn Gly Leu Asn His His His His			
225	230	235	240
His His Met Asn Asn Ser Ser Met Met His His Thr Pro Arg Ser Glu			
245	250	255	
Ser Ala Asn Ser Ile Ser Ser Gly Arg Asp Asp Leu Ser Pro Ser Ser			
260	265	270	
Ser Leu Asn Gly Phe Ser Thr Ser Asp Ala Ser Asp Val Lys Lys Ile			
275	280	285	
Lys Lys Gly Pro Ala Pro Arg Leu Gln Glu Glu Leu Cys Leu Val Cys			
290	295	300	
Gly Asp Arg Ala Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys Glu Gly			
305	310	315	320
Cys Lys Gly Phe Phe Arg Arg Ser Val Thr Lys Asn Ala Val Tyr Cys			
325	330	335	

Cys Lys Phe Gly His Ala Cys Glu Met Asp Met Tyr Met Arg Arg Lys			
340	345	350	
Cys Gln Glu Cys Arg Leu Lys Lys Cys Leu Ala Val Gly Met Arg Pro			
355	360	365	
Glu Cys Val Val Pro Glu Asn Gln Cys Ala Met Lys Arg Arg Glu Lys			
370	375	380	
Lys Ala Gln Lys Glu Lys Asp Lys Ile Gln Thr Ser Val Cys Ala Thr			
385	390	395	400
Glu Ile Lys Lys Glu Ile Leu Asp Leu Met Thr Cys Glu Pro Pro Ser			
405	410	415	
His Pro Thr Cys Pro Leu Leu Pro Glu Asp Ile Leu Ala Lys Cys Gln			
420	425	430	
Ala Arg Asn Ile Pro Pro Leu Ser Tyr Asn Gln Leu Ala Val Ile Tyr			
435	440	445	
Lys Leu Ile Trp Tyr Gln Asp Gly Tyr Glu Gln Pro Ser Glu Glu Asp			
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Leu Lys Arg Ile Met Ser Ser Pro Asp Glu Asn Glu Ser Gln His Asp			
465	470	475	480
Ala Ser Phe Arg His Ile Thr Glu Ile Thr Ile Leu Thr Val Gln Leu			
485	490	495	

Ile Val Glu Phe Ala Lys Gly Leu Pro Ala Phe Thr Lys Ile Pro Gln			
500	505	510	
Glu Asp Gln Ile Thr Leu Leu Lys Ala Cys Ser Ser Glu Val Met Met			
515	520	525	
Leu Arg Met Ala Arg Arg Tyr Asp His Asn Ser Asp Ser Ile Phe Phe			
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Ala Asn Asn Arg Ser Tyr Thr Arg Asp Ser Tyr Lys Met Ala Gly Met			
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Ala Asp Asn Ile Glu Asp Leu Leu His Phe Cys Arg Gln Met Tyr Ser			
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Met Lys Val Asp Asn Val Glu Tyr Ala Leu Leu Thr Ala Ile Val Ile			
580	585	590	
Phe Ser Asp Arg Pro Gly Leu Glu Glu Ala Glu Leu Val Glu Ala Ile			
595	600	605	
Gln Ser Tyr Tyr Ile Asp Thr Leu Arg Ile Tyr Ile Leu Asn Arg His			
610	615	620	
Cys Gly Asp Pro Met Ser Leu Val Phe Phe Ala Lys Leu Leu Ser Ile			
625	630	635	640
Leu Thr Glu Leu Arg Thr Leu Gly Asn Gln Asn Ala Glu Met Cys Phe			
645	650	655	

Ser Leu Lys Leu Lys Asn Arg Lys Leu Pro Lys Phe Leu Glu Glu Ile

660

665

670

Trp Asp Val His Ala Ile Pro Pro Ser Val Gln Ser His Ile Gln Ala

675

680

685

Thr Gln Ala Glu Lys Ala Ala Gln Glu Ala Gln Ala Thr Thr Ser Ala

690

695

700

Ile Ser Ala Ala Ala Thr Ser Ser Ser Ser Ile Asn Thr Ser Met Ala

705

710

715

720

Thr Ser Ser Ser Ser Ser Leu Ser Pro Ser Ala Ala Ser Thr Pro Asn

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<211> 1401

<212> DNA

<213> *Lucillia cuprina*

<220>

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ccg cag gag ata aag cca gac att tca cta ctc aat gaa aat aat acg 96

Pro Gln Glu Ile Lys Pro Asp Ile Ser Leu Leu Asn Glu Asn Asn Thr

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agt agt tat tcg ccc aaa cct gga agt cct aat cca ttt gcc atc gga 144

Ser Ser Tyr Ser Pro Lys Pro Gly Ser Pro Asn Pro Phe Ala Ile Gly

35 40 45

ttg cag gca ata aat gca gtc gct gcc gcg aat gcc aat aac caa aat 192

Leu Gln Ala Ile Asn Ala Val Ala Ala Ala Asn Ala Asn Asn Gln Asn

50 55 60

caa atg ttg caa act acg cca cca caa cag cag cag tat cca cca aat 240

Gln Met Leu Gln Thr Thr Pro Pro Gln Gln Gln Gln Tyr Pro Pro Asn

65 70 75 80

cac ccc ctt agt ggt tcg aaa cac ttg tgt tcc att tgt gga gac cgc 288

His Pro Leu Ser Gly Ser Lys His Leu Cys Ser Ile Cys Gly Asp Arg

85 90 95

gcc agt gga aaa cat tat ggg gtc tac agt tgt gag ggt tgt aaa ggg 336

Ala Ser Gly Lys His Tyr Gly Val Tyr Ser Cys Glu Gly Cys Lys Gly

100 105 110

ttc ttc aaa cgt acc gta cgc aag gac ttg aca tat gct tgt cgt gag	384
Phe Phe Lys Arg Thr Val Arg Lys Asp Leu Thr Tyr Ala Cys Arg Glu	
115 120 125	
gac aga aat tgc att ata gat aaa cga caa aga aat cgt tgc cag tat	432
Asp Arg Asn Cys Ile Ile Asp Lys Arg Gln Arg Asn Arg Cys Gln Tyr	
130 135 140	
tgt cgt tat caa aag tgt tta gct tgt ggc atg aaa cgc gaa gcg gtc	480
Cys Arg Tyr Gln Lys Cys Leu Ala Cys Gly Met Lys Arg Glu Ala Val	
145 150 155 160	
caa gag gaa cga caa cgt ggt act cgt gct gct aac gct aga gct gct	528
Gln Glu Glu Arg Gln Arg Gly Thr Arg Ala Ala Asn Ala Arg Ala Ala	
165 170 175	
ggt gct ggc ggt ggt gga gga ggt ggt ggt ggg gta agc aat gtg gtt	576
Gly Ala Gly Gly Gly Gly Gly Gly Gly Gly Gly Val Ser Asn Val Val	
180 185 190	
ggt gct ggc gga gaa gac ttt aaa ccc agc agt tca tta cgt gat ctc	624
Gly Ala Gly Gly Glu Asp Phe Lys Pro Ser Ser Ser Leu Arg Asp Leu	
195 200 205	
act ata gaa cgc atc att gaa gcc gag caa aag gct gaa tct ttg agc	672
Thr Ile Glu Arg Ile Ile Glu Ala Glu Gln Lys Ala Glu Ser Leu Ser	
210 215 220	

ttc tcg tat cat cgc aat agt gct att aag gcc aat gtt gtt tca att	1056
Phe Ser Tyr His Arg Asn Ser Ala Ile Lys Ala Asn Val Val Ser Ile	
340 345 350	
ttc gat cgt atc ctc tcg gag ttg agc atc aaa atg aaa cgt ctt aac	1104
Phe Asp Arg Ile Leu Ser Glu Leu Ser Ile Lys Met Lys Arg Leu Asn	
355 360 365	
atc gat cgc tcg gag ttg tcg tgt ctg aag gca atc ata ctc ttc aat	1152
Ile Asp Arg Ser Glu Leu Ser Cys Leu Lys Ala Ile Ile Leu Phe Asn	
370 375 380	
cca gac ata cgc ggt ctg aaa tgt cga gcc gac gtc gag gta tgt cgt	1200
Pro Asp Ile Arg Gly Leu Lys Cys Arg Ala Asp Val Glu Val Cys Arg	
385 390 395 400	
gaa aaa atc tat gcc tgt ctg gac gaa cac tgc cgc aca gaa cat cca	1248
Glu Lys Ile Tyr Ala Cys Leu Asp Glu His Cys Arg Thr Glu His Pro	
405 410 415	
ggc gat gat ggc cgc ttt gct cag cta cta cta agg ttg ccc gca ttg	1296
Gly Asp Asp Gly Arg Phe Ala Gln Leu Leu Leu Arg Leu Pro Ala Leu	
420 425 430	
cgt tcc atc agt ctc aaa tgt ctc gat cat ttg ttt ttc ttc cgt tta	1344
Arg Ser Ile Ser Leu Lys Cys Leu Asp His Leu Phe Phe Phe Arg Leu	
435 440 445	

ata ggc gaa aga gca ttg gag gaa tta att gct gag caa ttg gaa gct 1392

Ile Gly Glu Arg Ala Leu Glu Glu Leu Ile Ala Glu Gln Leu Glu Ala

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cct atc tgc

1401

Pro Ile Cys

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<211> 467

<212> PRT

<213> Lucillia cuprina

<400> 4

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Ser Ser Tyr Ser Pro Lys Pro Gly Ser Pro Asn Pro Phe Ala Ile Gly
35 40 45

Leu Gln Ala Ile Asn Ala Val Ala Ala Ala Asn Ala Asn Asn Gln Asn
50 55 60

Gln Met Leu Gln Thr Thr Pro Pro Gln Gln Gln Gln Tyr Pro Pro Asn
65 70 75 80

His Pro Leu Ser Gly Ser Lys His Leu Cys Ser Ile Cys Gly Asp Arg			
85	90	95	
Ala Ser Gly Lys His Tyr Gly Val Tyr Ser Cys Glu Gly Cys Lys Gly			
100	105	110	
Phe Phe Lys Arg Thr Val Arg Lys Asp Leu Thr Tyr Ala Cys Arg Glu			
115	120	125	
Asp Arg Asn Cys Ile Ile Asp Lys Arg Gln Arg Asn Arg Cys Gln Tyr			
130	135	140	
Cys Arg Tyr Gln Lys Cys Leu Ala Cys Gly Met Lys Arg Glu Ala Val			
145	150	155	160
Gln Glu Glu Arg Gln Arg Gly Thr Arg Ala Ala Asn Ala Arg Ala Ala			
165	170	175	
Gly Ala Gly Gly Gly Gly Gly Gly Gly Gly Gly Val Ser Asn Val Val			
180	185	190	
Gly Ala Gly Gly Glu Asp Phe Lys Pro Ser Ser Ser Leu Arg Asp Leu			
195	200	205	
Thr Ile Glu Arg Ile Ile Glu Ala Glu Gln Lys Ala Glu Ser Leu Ser			
210	215	220	
Gly Asp Asn Val Leu Pro Phe Leu Arg Val Gly Asn Asn Ser Met Val			
225	230	235	240

Gln His Asp Tyr Lys Gly Ala Val Ser His Leu Cys Gln Met Val Asn

245

250

255

Lys Gln Leu Tyr Gln Met Val Glu Tyr Ala Arg Arg Thr Pro His Phe

260

265

270

Thr His Leu Gln Arg Glu Asp Gln Ile Leu Leu Leu Lys Ala Gly Trp

275

280

285

Asn Glu Leu Leu Ile Ala Asn Val Ala Trp Cys Ser Ile Glu Ser Leu

290

295

300

Asp Ala Glu Tyr Ala Ser Pro Gly Thr Val His Asp Gly Ser Phe Gly

305

310

315

320

Arg Arg Ser Pro Val Arg Gln Pro Gln Gln Leu Phe Leu Asn Gln Asn

325

330

335

Phe Ser Tyr His Arg Asn Ser Ala Ile Lys Ala Asn Val Val Ser Ile

340

345

350

Phe Asp Arg Ile Leu Ser Glu Leu Ser Ile Lys Met Lys Arg Leu Asn

355

360

365

Ile Asp Arg Ser Glu Leu Ser Cys Leu Lys Ala Ile Ile Leu Phe Asn

370

375

380

Pro Asp Ile Arg Gly Leu Lys Cys Arg Ala Asp Val Glu Val Cys Arg

385

390

395

400

Glu Lys Ile Tyr Ala Cys Leu Asp Glu His Cys Arg Thr Glu His Pro

405

410

415

Gly Asp Asp Gly Arg Phe Ala Gln Leu Leu Leu Arg Leu Pro Ala Leu

420

425

430

Arg Ser Ile Ser Leu Lys Cys Leu Asp His Leu Phe Phe Phe Arg Leu

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Ile Gly Glu Arg Ala Leu Glu Glu Leu Ile Ala Glu Gln Leu Glu Ala

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455

460

Pro Ile Cys

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<211> 585

<212> DNA

<213> Myzus persicae

<220>

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<222> (1) .. (585)

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15

ttg atc ctt att ttt ctt ctt ctt ttt ctt tgg agg ttg ttg gcc ttc	96
Leu Ile Leu Ile Phe Leu Leu Leu Phe Leu Trp Arg Leu Leu Ala Phe	
20 25 30	
cgg ttc ttg ttt ata tct gaa caa cca cct ccc gaa gag ctg tgc ctg	144
Arg Phe Leu Phe Ile Ser Glu Gln Pro Pro Pro Glu Glu Leu Cys Leu	
35 40 45	
gtg tgt ggc gac cgg tcg tcc ggt tac cat tac aac gct ctc aca tgc	192
Val Cys Gly Asp Arg Ser Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys	
50 55 60	
gaa gga tgc aag ggg ttc ttc cgg agg agc atc acc aag aac gcc gtg	240
Glu Gly Cys Lys Gly Phe Phe Arg Arg Ser Ile Thr Lys Asn Ala Val	
65 70 75 80	
tac cag tgc aag tac ggc aac aat tgc gaa atc gac atg tac atg agg	288
Tyr Gln Cys Lys Tyr Gly Asn Asn Cys Glu Ile Asp Met Tyr Met Arg	
85 90 95	
cgg aag tgc cag gag tgc cgg ctg aaa aaa tgc ctg acc gtc ggc atg	336
Arg Lys Cys Gln Glu Cys Arg Leu Lys Lys Cys Leu Thr Val Gly Met	
100 105 110	
agg cct gaa tgt gtt gta cct gaa gtt caa tgc gca gta aaa aga aag	384
Arg Pro Glu Cys Val Val Pro Glu Val Gln Cys Ala Val Lys Arg Lys	
115 120 125	

gag aaa aaa gct caa cga gaa aaa gat aaa cca aat tct act aca gac 432

Glu Lys Lys Ala Gln Arg Glu Lys Asp Lys Pro Asn Ser Thr Thr Asp

130

135

140

att tct cct gaa ata ata aaa ata gaa cct aca gag atg aag att gaa 480

Ile Ser Pro Glu Ile Ile Lys Ile Glu Pro Thr Glu Met Lys Ile Glu

145

150

155

160

tgt ggt gaa cca atg ata atg ggc aca cct atg ccg act gta cct tac 528

Cys Gly Glu Pro Met Ile Met Gly Thr Pro Met Pro Thr Val Pro Tyr

165

170

175

gtg aaa cct ttg agt tct ctc gtg ccg aat tcg gca cga gtc acg ggt 576

Val Lys Pro Leu Ser Ser Leu Val Pro Asn Ser Ala Arg Val Thr Gly

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tac aaa ttt

585

Tyr Lys Phe

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<210> 6

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<212> PRT

<213> Myzus persicae

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Leu Ile Leu Ile Phe Leu Leu Leu Phe Leu Trp Arg Leu Leu Ala Phe

20

25

30

Arg Phe Leu Phe Ile Ser Glu Gln Pro Pro Pro Glu Glu Leu Cys Leu

35

40

45

Val Cys Gly Asp Arg Ser Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys

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55

60

Glu Gly Cys Lys Gly Phe Phe Arg Arg Ser Ile Thr Lys Asn Ala Val

65

70

75

80

Tyr Gln Cys Lys Tyr Gly Asn Asn Cys Glu Ile Asp Met Tyr Met Arg

85

90

95

Arg Lys Cys Gln Glu Cys Arg Leu Lys Lys Cys Leu Thr Val Gly Met

100

105

110

Arg Pro Glu Cys Val Val Pro Glu Val Gln Cys Ala Val Lys Arg Lys

115

120

125

Glu Lys Lys Ala Gln Arg Glu Lys Asp Lys Pro Asn Ser Thr Thr Asp

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135

140

Ile Ser Pro Glu Ile Ile Lys Ile Glu Pro Thr Glu Met Lys Ile Glu

145

150

155

160

Cys Gly Glu Pro Met Ile Met Gly Thr Pro Met Pro Thr Val Pro Tyr

165

170

175

Val Lys Pro Leu Ser Ser Leu Val Pro Asn Ser Ala Arg Val Thr Gly

180

185

190

Tyr Lys Phe

195

<210> 7

<211> 208

<212> DNA

<213> Myzus persicae

<400> 7

catgcctgca ggtcgactct agaggatccc ctctgtccggt taccattaca acgcactcac 60

ctgtgaaggc tgtaaggggt tctttcgacg gagtggtacc aaaaatgogg tgtattgttg 120

taaatttggc catgcctgcg aaatggacat gtatatgcga cgtaaattgtc aggaatgtag 180

gctgaaaaaa tgtttggctg tgggcatg

208

<210> 8

<211> 436

<212> DNA

<213> Myzus persicae

<400> 8

catgcggccg gaatgtgtgg tgcccgaaaa ccagtgtgca atgaaacgac gcgaaaagaa 60

agcacaaaaa gagaaggata aaatacagac cagtgtgtgt gcaacggaaa ttaaaaagga 120
 aatactcgat ttaatgacat gtgaaccgcc atcacatcca acgtgtccgc tgttacctga 180
 agacattttg gctaaatgtc aagctcgtaa tatacctcct ttatcgta caatcaattggc 240
 agttatatat aaattaatat ggtatcaaga tggctacgaa cagccatccg aggaagatct 300
 caaacgtata atgagttcac ccgatgaaaa tgaaagtcaa cacgatgcac catttcgtca 360
 tataacagaa atcactatac taacagtaca attaattggt gaatgtgcc aaggtctagg 420
 gtaccgagct cgaatt 436

<210> 9

<211> 1797

<212> DNA

<213> Myzus persicae

<220>

<221> CDS

<222> (1) .. (1797)

<400> 9

atg atg gac cag aaa tgt gac gtc ggc ggt ggt ggt gtc gct gct gcc 48

Met Met Asp Gln Lys Cys Asp Val Gly Gly Gly Gly Val Ala Ala Ala

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5

10

15

gcc gcc ggt atc ggt ggc ggc ggt gtc ggc ggc ctc atg tcg tac aac 96

Ala Ala Gly Ile Gly Gly Gly Gly Val Gly Gly Leu Met Ser Tyr Asn

20

25

30

cgt ggc cgt ggc ggc acc gag gtc atc atc aaa ccc cgt agt cct gcc 144

Arg Gly Arg Gly Gly Thr Glu Val Ile Ile Lys Pro Arg Ser Pro Ala

35

40

45

gtg gtg cag gtg gcc acc ggt ggc agt tac cac ggc ctg ccg gcg gcc 192

Val Val Gln Val Ala Thr Gly Gly Ser Tyr His Gly Leu Pro Ala Ala

50

55

60

tcc gac gcc gtc atc gtg cgc agc ccg cca ggc ggc cac ttg ccc ggg 240

Ser Asp Ala Val Ile Val Arg Ser Pro Pro Gly Gly His Leu Pro Gly

65

70

75

80

ccg cag cag caa gtg ccg ccg tcc cgc aac ggc tgt tcc acc ctg ttt 288

Pro Gln Gln Gln Val Pro Pro Ser Arg Asn Gly Cys Ser Thr Leu Phe

85

90

95

agc gac atc gct ggc gtc aag cga ctc agg ccc gac gat tgg ttg gcc 336

Ser Asp Ile Ala Gly Val Lys Arg Leu Arg Pro Asp Asp Trp Leu Ala

100

105

110

gtc aac tcg ccg ccc gcc tct tcg ccc ggc acg tcg cac ata tcc tac	384
Val Asn Ser Pro Pro Ala Ser Ser Pro Gly Thr Ser His Ile Ser Tyr	
115 120 125	
aca gtc ata tcg aac ggc ggc ggc ggt ggc ggc ggt ggc ggc ggt ggt	432
Thr Val Ile Ser Asn Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly	
130 135 140	
tac aac acg tct cca atg tcg acc aac agc tac gac ccg tac agt ccg	480
Tyr Asn Thr Ser Pro Met Ser Thr Asn Ser Tyr Asp Pro Tyr Ser Pro	
145 150 155 160	
atg agt gga aaa atc gtc aaa gaa gag ttg tct ccg cca aac agc ctg	528
Met Ser Gly Lys Ile Val Lys Glu Glu Leu Ser Pro Pro Asn Ser Leu	
165 170 175	
tcg gga gtc agc agc cat tcg gat ggg ttg aag aag aag aaa ctc aac	576
Ser Gly Val Ser Ser His Ser Asp Gly Leu Lys Lys Lys Lys Leu Asn	
180 185 190	
cac acg ccc tcg acc ggt gtc gtc aac acc tcg gca tcg ggc ccc ggg	624
His Thr Pro Ser Thr Gly Val Val Asn Thr Ser Ala Ser Gly Pro Gly	
195 200 205	
ggt ggc gtt ggt ggc aat gtg ctg aac aac cga cct ccc gaa gag ctg	672
Gly Gly Val Gly Gly Asn Val Leu Asn Asn Arg Pro Pro Glu Glu Leu	
210 215 220	

att gaa tgt ggt gaa cca atg ata atg ggc aca cct atg ccg act gta	1056
Ile Glu Cys Gly Glu Pro Met Ile Met Gly Thr Pro Met Pro Thr Val	
340 345 350	
cct tac gtg aaa cct ttg agt tct gaa caa aaa gaa ctg atc cac cga	1104
Pro Tyr Val Lys Pro Leu Ser Ser Glu Gln Lys Glu Leu Ile His Arg	
355 360 365	
ctt gtc tat ttc cag gat caa tat gaa gct cct agt gaa aaa gac atg	1152
Leu Val Tyr Phe Gln Asp Gln Tyr Glu Ala Pro Ser Glu Lys Asp Met	
370 375 380	
aaa cgt tta aca ata aat aat caa aat atg gat gaa tat gat gaa gaa	1200
Lys Arg Leu Thr Ile Asn Asn Gln Asn Met Asp Glu Tyr Asp Glu Glu	
385 390 395 400	
aaa caa agt gac acc aca tat cga atc atc act gag atg aca ata ctc	1248
Lys Gln Ser Asp Thr Thr Tyr Arg Ile Ile Thr Glu Met Thr Ile Leu	
405 410 415	
aca gtt caa ctg att gtt gag ttt gcc aaa cga tta cca ggt ttc gat	1296
Thr Val Gln Leu Ile Val Glu Phe Ala Lys Arg Leu Pro Gly Phe Asp	
420 425 430	
aaa ctt gta aga gaa gat caa atc act tta ctc aag gct tgc tca agt	1344
Lys Leu Val Arg Glu Asp Gln Ile Thr Leu Leu Lys Ala Cys Ser Ser	
435 440 445	

gaa gct atg atg ttc agg gta gca agg aag tat gac atc acc act gac	1392
Glu Ala Met Met Phe Arg Val Ala Arg Lys Tyr Asp Ile Thr Thr Asp	
450 455 460	
tca ata gtg ttt gct aac aac cag cca ttt tca gct gat tca tat aac	1440
Ser Ile Val Phe Ala Asn Asn Gln Pro Phe Ser Ala Asp Ser Tyr Asn	
465 470 475 480	
aaa gct gga ttg gga gat gcc att gaa aac caa ctg tca ttc agt cgg	1488
Lys Ala Gly Leu Gly Asp Ala Ile Glu Asn Gln Leu Ser Phe Ser Arg	
485 490 495	
ttt atg tac aat atg aag gtg gat aac gca gaa tat gcc tta ttg acc	1536
Phe Met Tyr Asn Met Lys Val Asp Asn Ala Glu Tyr Ala Leu Leu Thr	
500 505 510	
gcc atc gtc ata ttt tcg agt agg cca aat tta cta gat ggt tgg aaa	1584
Ala Ile Val Ile Phe Ser Ser Arg Pro Asn Leu Leu Asp Gly Trp Lys	
515 520 525	
gtg gag aaa atc caa gaa atc tac cta gag tcc tta aaa gct tat gta	1632
Val Glu Lys Ile Gln Glu Ile Tyr Leu Glu Ser Leu Lys Ala Tyr Val	
530 535 540	
gat aat cga gac cgt gac aca gca act gta cga tat gcg cga ctt ctc	1680
Asp Asn Arg Asp Arg Asp Thr Ala Thr Val Arg Tyr Ala Arg Leu Leu	
545 550 555 560	

tca gta ctt aca gaa ttg cgc aca tta ggc aat gaa aac tct gag cta 1728

Ser Val Leu Thr Glu Leu Arg Thr Leu Gly Asn Glu Asn Ser Glu Leu

565

570

575

tgt atg aca ctg aaa ctg aaa aac aga gta gta ccc cca ttc ttg gcc 1776

Cys Met Thr Leu Lys Leu Lys Asn Arg Val Val Pro Pro Phe Leu Ala

580

585

590

gaa ata tgg gat gtc atg cca

1797

Glu Ile Trp Asp Val Met Pro

595

<210> 10

<211> 599

<212> PRT

<213> *Myzus persicae*

<400> 10

Met Met Asp Gln Lys Cys Asp Val Gly Gly Gly Gly Val Ala Ala Ala

1

5

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15

Ala Ala Gly Ile Gly Gly Gly Gly Val Gly Gly Leu Met Ser Tyr Asn

20

25

30

Arg Gly Arg Gly Gly Thr Glu Val Ile Ile Lys Pro Arg Ser Pro Ala

35

40

45

Val	Val	Gln	Val	Ala	Thr	Gly	Gly	Ser	Tyr	His	Gly	Leu	Pro	Ala	Ala
	50					55						60			
Ser	Asp	Ala	Val	Ile	Val	Arg	Ser	Pro	Pro	Gly	Gly	His	Leu	Pro	Gly
65					70					75				80	
Pro	Gln	Gln	Gln	Val	Pro	Pro	Ser	Arg	Asn	Gly	Cys	Ser	Thr	Leu	Phe
				85					90					95	
Ser	Asp	Ile	Ala	Gly	Val	Lys	Arg	Leu	Arg	Pro	Asp	Asp	Trp	Leu	Ala
			100					105						110	
Val	Asn	Ser	Pro	Pro	Ala	Ser	Ser	Pro	Gly	Thr	Ser	His	Ile	Ser	Tyr
			115					120					125		
Thr	Val	Ile	Ser	Asn	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly
		130				135							140		
Tyr	Asn	Thr	Ser	Pro	Met	Ser	Thr	Asn	Ser	Tyr	Asp	Pro	Tyr	Ser	Pro
145					150					155					160
Met	Ser	Gly	Lys	Ile	Val	Lys	Glu	Glu	Leu	Ser	Pro	Pro	Asn	Ser	Leu
					165					170					175
Ser	Gly	Val	Ser	Ser	His	Ser	Asp	Gly	Leu	Lys	Lys	Lys	Lys	Leu	Asn
					180				185					190	
His	Thr	Pro	Ser	Thr	Gly	Val	Val	Asn	Thr	Ser	Ala	Ser	Gly	Pro	Gly
					195				200					205	

Gly Gly Val Gly Gly Asn Val Leu Asn Asn Arg Pro Pro Glu Glu Leu

210

215

220

Cys Leu Val Cys Gly Asp Arg Ser Ser Gly Tyr His Tyr Asn Ala Leu

225

230

235

240

Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ser Ile Thr Lys Asn

245

250

255

Ala Val Tyr Gln Cys Lys Tyr Gly Asn Asn Cys Glu Ile Asp Met Tyr

260

265

270

Met Arg Arg Lys Cys Gln Glu Cys Arg Leu Lys Lys Cys Leu Thr Val

275

280

285

Gly Met Arg Pro Glu Cys Val Val Pro Glu Val Gln Cys Ala Val Lys

290

295

300

Arg Lys Glu Lys Lys Ala Gln Arg Glu Lys Asp Lys Pro Asn Ser Thr

305

310

315

320

Thr Asp Ile Ser Pro Glu Ile Ile Lys Ile Glu Pro Thr Glu Met Lys

325

330

335

Ile Glu Cys Gly Glu Pro Met Ile Met Gly Thr Pro Met Pro Thr Val

340

345

350

Pro Tyr Val Lys Pro Leu Ser Ser Glu Gln Lys Glu Leu Ile His Arg

355

360

365

Leu Val Tyr Phe Gln Asp Gln Tyr Glu Ala Pro Ser Glu Lys Asp Met			
370	375	380	
Lys Arg Leu Thr Ile Asn Asn Gln Asn Met Asp Glu Tyr Asp Glu Glu			
385	390	395	400
Lys Gln Ser Asp Thr Thr Tyr Arg Ile Ile Thr Glu Met Thr Ile Leu			
	405	410	415
Thr Val Gln Leu Ile Val Glu Phe Ala Lys Arg Leu Pro Gly Phe Asp			
	420	425	430
Lys Leu Val Arg Glu Asp Gln Ile Thr Leu Leu Lys Ala Cys Ser Ser			
	435	440	445
Glu Ala Met Met Phe Arg Val Ala Arg Lys Tyr Asp Ile Thr Thr Asp			
	450	455	460
Ser Ile Val Phe Ala Asn Asn Gln Pro Phe Ser Ala Asp Ser Tyr Asn			
465	470	475	480
Lys Ala Gly Leu Gly Asp Ala Ile Glu Asn Gln Leu Ser Phe Ser Arg			
	485	490	495
Phe Met Tyr Asn Met Lys Val Asp Asn Ala Glu Tyr Ala Leu Leu Thr			
	500	505	510
Ala Ile Val Ile Phe Ser Ser Arg Pro Asn Leu Leu Asp Gly Trp Lys			
	515	520	525

Val Glu Lys Ile Gln Glu Ile Tyr Leu Glu Ser Leu Lys Ala Tyr Val

530

535

540

Asp Asn Arg Asp Arg Asp Thr Ala Thr Val Arg Tyr Ala Arg Leu Leu

545

550

555

560

Ser Val Leu Thr Glu Leu Arg Thr Leu Gly Asn Glu Asn Ser Glu Leu

565

570

575

Cys Met Thr Leu Lys Leu Lys Asn Arg Val Val Pro Pro Phe Leu Ala

580

585

590

Glu Ile Trp Asp Val Met Pro

595

<210> 11

<211> 1131

<212> DNA

<213> Myzus persicae

<220>

<221> CDS

<222> (1)..(1131)

<400> 11

atg tat tcc aac tcg tac acc atg tat tca agt gac aga tta tac agc 48

Met Tyr Ser Asn Ser Tyr Thr Met Tyr Ser Ser Asp Arg Leu Tyr Ser

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10

15

gtc gat cgg aac agt atg atg aat aat tct tgc aac gta caa gac tct	96
Val Asp Arg Asn Ser Met Met Asn Asn Ser Cys Asn Val Gln Asp Ser	
20 25 30	
ccg aat tac ccg ccc aac cat cca ctc agc ggt tcg aaa cat ctg tgc	144
Pro Asn Tyr Pro Pro Asn His Pro Leu Ser Gly Ser Lys His Leu Cys	
35 40 45	
tcc ata tgc ggc gat cgc gcc agt gga aaa cat tac gga gtc tac agc	192
Ser Ile Cys Gly Asp Arg Ala Ser Gly Lys His Tyr Gly Val Tyr Ser	
50 55 60	
tgc gag ggg tgc aaa ggg ttc ttc aaa cgc aca gtg agg aaa aat ttg	240
Cys Glu Gly Cys Lys Gly Phe Phe Lys Arg Thr Val Arg Lys Asn Leu	
65 70 75 80	
tca tac gcg tgt cgc gaa gaa aac aaa tgc atc atc gac aag cgc caa	288
Ser Tyr Ala Cys Arg Glu Glu Asn Lys Cys Ile Ile Asp Lys Arg Gln	
85 90 95	
cga aat cgg tgc caa tac tgc agg tat caa aaa tgt ttg acc atg ggc	336
Arg Asn Arg Cys Gln Tyr Cys Arg Tyr Gln Lys Cys Leu Thr Met Gly	
100 105 110	
atg aaa aga gaa gct gtg cag gaa gaa aga caa cgt aca aaa gaa cga	384
Met Lys Arg Glu Ala Val Gln Glu Glu Arg Gln Arg Thr Lys Glu Arg	
115 120 125	

gat cat aat aac atc gaa gtt gaa ccc acg agc agt tct aat act gat	432
Asp His Asn Asn Ile Glu Val Glu Pro Thr Ser Ser Ser Asn Thr Asp	
130 135 140	
atg cca gtg gaa ctc ata tta agg gct gag aat aaa gct gat gct ata	480
Met Pro Val Glu Leu Ile Leu Arg Ala Glu Asn Lys Ala Asp Ala Ile	
145 150 155 160	
aag act gaa caa cag tat ata gag caa cga cat cct caa cat act gtt	528
Lys Thr Glu Gln Gln Tyr Ile Glu Gln Arg His Pro Gln His Thr Val	
165 170 175	
ggt gct att tgt caa gca act gac aag cag tta ata caa ctt gtt gaa	576
Gly Ala Ile Cys Gln Ala Thr Asp Lys Gln Leu Ile Gln Leu Val Glu	
180 185 190	
tgg gcc aag cat ata ccg cat ttt aaa aat tta cct cta ggc gat caa	624
Trp Ala Lys His Ile Pro His Phe Lys Asn Leu Pro Leu Gly Asp Gln	
195 200 205	
gtt tta tta ttg aga gct ggt tgg aat gag ttg atg att gca gca ttt	672
Val Leu Leu Leu Arg Ala Gly Trp Asn Glu Leu Met Ile Ala Ala Phe	
210 215 220	
tcc cat aga tca atc agt gta aaa gat ggt ata gtc tta gct act gga	720
Ser His Arg Ser Ile Ser Val Lys Asp Gly Ile Val Leu Ala Thr Gly	
225 230 235 240	

ctt act gtt gac aga gat tca gct cac caa gct ggt gtt gaa gct ata	768
Leu Thr Val Asp Arg Asp Ser Ala His Gln Ala Gly Val Glu Ala Ile	
245 250 255	
ttt gat cgt gta ctc act gaa ctc gtt gct aaa atg aga gat atg ggt	816
Phe Asp Arg Val Leu Thr Glu Leu Val Ala Lys Met Arg Asp Met Gly	
260 265 270	
atg gat aga aca gag ctt ggc tgt ttg cgt act att att ctt ttt aat	864
Met Asp Arg Thr Glu Leu Gly Cys Leu Arg Thr Ile Ile Leu Phe Asn	
275 280 285	
cca ggt tca aaa ggt ttg cag tct gtg aat gaa gtg caa gta ctg cgt	912
Pro Gly Ser Lys Gly Leu Gln Ser Val Asn Glu Val Gln Val Leu Arg	
290 295 300	
gat aag gtt tat gtt gcg tta gaa gaa tat tgt cgt aca aca cat cca	960
Asp Lys Val Tyr Val Ala Leu Glu Glu Tyr Cys Arg Thr Thr His Pro	
305 310 315 320	
gaa gaa cct gga cga ttt gct aaa cta ctt ctt cgg ctt cct tca tta	1008
Glu Glu Pro Gly Arg Phe Ala Lys Leu Leu Leu Arg Leu Pro Ser Leu	
325 330 335	
cgt tca att gga tta aaa tgt ctg gaa cat tta ttc ttt tat aaa ctt	1056
Arg Ser Ile Gly Leu Lys Cys Leu Glu His Leu Phe Phe Tyr Lys Leu	
340 345 350	

att ggc gat tcc cca att gat aca ttt tta atg gaa gtt ctc gaa tca 1104

Ile Gly Asp Ser Pro Ile Asp Thr Phe Leu Met Glu Val Leu Glu Ser

355

360

365

tct tca cat gac gtt caa gta gct aca

1131

Ser Ser His Asp Val Gln Val Ala Thr

370

375

<210> 12

<211> 377

<212> PRT

<213> Myzus persicae

<400> 12

Met Tyr Ser Asn Ser Tyr Thr Met Tyr Ser Ser Asp Arg Leu Tyr Ser

1

5

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15

Val Asp Arg Asn Ser Met Met Asn Asn Ser Cys Asn Val Gln Asp Ser

20

25

30

Pro Asn Tyr Pro Pro Asn His Pro Leu Ser Gly Ser Lys His Leu Cys

35

40

45

Ser Ile Cys Gly Asp Arg Ala Ser Gly Lys His Tyr Gly Val Tyr Ser

50

55

60

Cys Glu Gly Cys Lys Gly Phe Phe Lys Arg Thr Val Arg Lys Asn Leu

65

70

75

80

Ser Tyr Ala Cys Arg Glu Glu Asn Lys Cys Ile Ile Asp Lys Arg Gln

85

90

95

Arg Asn Arg Cys Gln Tyr Cys Arg Tyr Gln Lys Cys Leu Thr Met Gly

100

105

110

Met Lys Arg Glu Ala Val Gln Glu Glu Arg Gln Arg Thr Lys Glu Arg

115

120

125

Asp His Asn Asn Ile Glu Val Glu Pro Thr Ser Ser Ser Asn Thr Asp

130

135

140

Met Pro Val Glu Leu Ile Leu Arg Ala Glu Asn Lys Ala Asp Ala Ile

145

150

155

160

Lys Thr Glu Gln Gln Tyr Ile Glu Gln Arg His Pro Gln His Thr Val

165

170

175

Gly Ala Ile Cys Gln Ala Thr Asp Lys Gln Leu Ile Gln Leu Val Glu

180

185

190

Trp Ala Lys His Ile Pro His Phe Lys Asn Leu Pro Leu Gly Asp Gln

195

200

205

Val Leu Leu Leu Arg Ala Gly Trp Asn Glu Leu Met Ile Ala Ala Phe

210

215

220

Ser His Arg Ser Ile Ser Val Lys Asp Gly Ile Val Leu Ala Thr Gly

225

230

235

240

Leu Thr Val Asp Arg Asp Ser Ala His Gln Ala Gly Val Glu Ala Ile

245

250

255

Phe Asp Arg Val Leu Thr Glu Leu Val Ala Lys Met Arg Asp Met Gly

260

265

270

Met Asp Arg Thr Glu Leu Gly Cys Leu Arg Thr Ile Ile Leu Phe Asn

275

280

285

Pro Gly Ser Lys Gly Leu Gln Ser Val Asn Glu Val Gln Val Leu Arg

290

295

300

Asp Lys Val Tyr Val Ala Leu Glu Glu Tyr Cys Arg Thr Thr His Pro

305

310

315

320

Glu Glu Pro Gly Arg Phe Ala Lys Leu Leu Leu Arg Leu Pro Ser Leu

325

330

335

Arg Ser Ile Gly Leu Lys Cys Leu Glu His Leu Phe Phe Tyr Lys Leu

340

345

350

Ile Gly Asp Ser Pro Ile Asp Thr Phe Leu Met Glu Val Leu Glu Ser

355

360

365

Ser Ser His Asp Val Gln Val Ala Thr

370

375

<210> 13

<211> 150

<212> DNA

<213> Lucilia cuprina

<220>

<221> CDS

<222> (9)..(134)

<400> 13

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Glu Gly Cys Lys Gly Phe Phe Lys Arg Thr Val Arg Lys Asp

1

5

10

ttg aca tat gct tgt cgt gag gac aga aat tgc att ata gat aaa cga 98

Leu Thr Tyr Ala Cys Arg Glu Asp Arg Asn Cys Ile Ile Asp Lys Arg

15

20

25

30

caa aga aat cgt tgc cag tat tgt cgc tac caa aag tgatcgatac cgtcga 150

Gln Arg Asn Arg Cys Gln Tyr Cys Arg Tyr Gln Lys

35

40

<210> 14

<211> 42

<212> PRT

<213> Lucilia cuprina

<400> 14

Glu Gly Cys Lys Gly Phe Phe Lys Arg Thr Val Arg Lys Asp Leu Thr

1

5

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15

Tyr Ala Cys Arg Glu Asp Arg Asn Cys Ile Ile Asp Lys Arg Gln Arg

20

25

30

Asn Arg Cys Gln Tyr Cys Arg Tyr Gln Lys

35

40

<210> 15

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 15

cggaattccg cctcnggnta ycaytayaay gc

32

<210> 16

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 16

cgcggatccr cactcctgac actttcgycr ca

32

<210> 17

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 17

gcctcggggt atcactataa cgc

23

<210> 18

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 18

gcactcctga cactttcgtc tca

23

<210> 19

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 19

tcgtccgggtt accattacaa cgc

23

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:primer

<400> 20

tagacctttg gcraaytcna caat

24